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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,640	01/04/2005	Stephan Fegert	FEGERT	3103

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EXAMINER	
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ART UNIT	PAPER NUMBER
3768	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/517,640	FEGERT ET AL.	
	Examiner	Art Unit	
	Helene Bor	3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-4,7-21,26,27 and 31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-4, 7-21, 26-27 & 31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 September 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 26 and 31 are objected to because of the following informalities: The claim language explains the steps of producing and detecting. However there exists an inconsistency with the language when the last step is not claimed as a verb but rather a noun. It would be more appropriate to perhaps state "modulating frequency" in instead of "frequency modulation". Appropriate correction is required.

2. Claim 9 is objected to because of two issues: Although the claim appears to be directed to a subcombination (an apparatus for location of an instrument, per preamble), the claimed elements are defined in relation to "the instrument", which implies that either the combination should be positively claimed, or the claimed element, should be set forth as "adapted to" or "configured to" in relation to the elements of the combination. Secondly, there is no claimed structure for performing the limitation of the "wherein" clause.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 27 provides for the use of frequency-selective amplification, elimination of disturbance fields or distinguishing between different magnetic probes, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it

merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 27 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 26-27 & 31 rejected under 35 U.S.C. 102(b) as being anticipated by Kuckes'755 (US Patent No. 5,258,755).

Claim 26 & 31: Kuckes'755 teaches determining the location of an instrument (Abstrast) comprising the steps of providing at least one magnet that rotated to produce a magnetic moment perpendicular to an axis of the instrument (Col. 10, Line 46-50). Kuckes'755 teaches a method for frequency modulation for variation of the magnetic field generated by the magnet (Col. 9, Line 35-59 & Col. 10, Line 50-54). Kuckes'755 teaches detecting the three time-dependent magnetic field components (Col. 2, Line 60 – Col. 3, Line 24).

Claim 27: Kuckes'755 teaches a method for elimination of disturbance fields (Col. 11, Line 3-9).

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claim 2-3, 7-21, 26-27 & 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuckes'755 (US Patent No. 5,258,755) and further in view of Kuckes'775 (US Patent No. 5,589,775).

Claim 9: Kuckes'755 teaches determining the location of an instrument (Abstrast) wherein at least one magnet produces a magnetic moment perpendicular to an axis of the instrument and a drive for rotating the magnet independently from the instrument shaft (Col. 6, Line 7-11 & Col. 10, Line 46-50). While Kuckes'755 hints in US Patent No. 5,258,755 about finding the instantaneous angular position [roll angle], Kuckes'775 explains the process in more detail. Kuckes'775 teaches a roll angle of instrument is measured by a variable magnetic field component, which depends on the roll angle (Col. 4, Line 32-60). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kuckes'755 to include the roll angle measurement as taught by Kuckes'775 in order to understand the relationship between the rotating magnetic field source and the magnetic field sensor (Col. 4, Line 32-33).

Claim 2: Kuckes'755 teaches a receiver [magnetometer] which detects the three time-dependent magnetic field components (Col. 2, Line 60 – Col. 3, Line 24).

Claim 3: Kuckes'755 teaches an evaluation unit [computer] for determining parameters such as position (Col. 7, Line 39-46) or position of the instrument axis (Col. 9, Line 8-12).

Claim 7: Kuckes'755 teaches the drive being an electrical drive (Col. 10, Line 46-50).

Claim 8: Kuckes'755 teaches the drive is a hydraulic drive using liquid to drive the magnet (Col. 10, Line 41-46).

Claim 13: Kuckes'755 teaches the instrument having a drill or cutting apparatus (Figure 1, Element 32).

Claim 14: Kuckes'755 teaches the instrument has an opening for ejection of a liquid such as drilling fluid (Figure 5, Element 36).

Claim 17: Kuckes'755 teaches an apparatus [such as a computer] for recording electrical data (Figure 1, Element 24).

Claim 18: Kuckes'755 teaches using transmitters and receivers for processing signals to determine a position of the instrument at different points (Figure 1, Element 20 & Element 8).

Claim 19: Kuckes'755 teaches a transmitter constructed as a permanent magnet (Figure 1, Element 40) and configured to produce different frequencies, amplitudes and/or by the production of different analog or digital values (Col. 9, Line 35-59).

Claim 20: Kuckes'755 teaches a frequency modulation and/or amplitude modulation for variation of the magnetic field generated by the magnet (Col. 9, Line 35-59).

Claim 21: Kuckes'755 fails to teach shielding. However, Kuckes'775 teaches a gradual shielding of the magnet (Col. 9, Line 65 – Col. 10, Line 11). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kuckes'755 to include the shielding as taught by Kuckes'775 in order to give a good distance determination and provide a reference channel (Col. 10, Line 7-9).

9. Claim 4 & 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuckes'755 (US Patent No. 5,258,755), in view of Kuckes'775 (US Patent No. 5,589,775) and further in view of Bladen'820 et al. (US Patent No. 5,913,820).

Claim 4: Kuckes'755 fails to teach the sensor in the instrument axis and the magnet on the outside. However, Bladen'820 teaches magnetic field sensor disposed in instrument axis, and a magnet disposed outside the instrument axis (Col. 2, Line 36-40). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kuckes'755 and Kuckes'775 to include magnetic field sensor disposed in instrument axis as taught by Bladen'820 in order in order to achieve a surprisingly accurate estimate of the position of the sensor in a computationally simple manner (Col. 2, Line 66 – Col. 3, Line 2).

Claim 15 & 16: Kuckes'755 and Kuckes'775 fails to teach an apparatus for emission of light beams, laser beams, radioactive beams, sound waves or ultrasound waves and fails to teach an apparatus for ultrasound/optical imaging. However,

Bladen'820 teaches using a magnetic positioning system in combination with a colonoscope capable of imaging (Col. 12, Line 15-44 & 64-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kuckes'755 and Kuckes'775 to include the emission of various energy waves as taught by Bladen'820 in order to present the operator with a convenient view of the path of the instrument (Col. 12, Line 67 – Col. 13, Line 2).

10. Claim 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuckes'755 (US Patent No. 5,258,755), in view of Kuckes'775 (US Patent No. 5,589,775) and further in view of CreightonIV'196 (US Patent No. 6,537,196 B1).

Claim 10: Kuckes'755 and Kuckes'775 fail to sufficiently teach a reproducible deflection. However, CreightonIV'196 teaches an apparatus for providing a reproducible deflection of the magnet from its rotation axis (Col. 6, Line 7-11), wherein the reversing the magnetic field is considered a deflection. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kuckes'755 and Kuckes'775 to include the reproducible deflection as taught by CreightonIV'196 in order to ensure proper navigation of the magnetic object through the medium (Col. 6, Line 29-36).

Claim 11: Kuckes'755 and Kuckes'775 fail to teach an apparatus with means to interrupt the rotation of the magnet. CreightonIV'196 teaches means to interrupts the rotation of the magnet (Col. 6, Line 20-24). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kuckes'755 and Kuckes'775 to include the magnetic rotation interruption as taught by

CreightonIV'196 in order to ensure proper navigation of the magnetic object through the medium (Col. 6, Line 29-36).

Claim 12: Kuckes'755 and Kuckes'775 fail to adequately teach magnetic elements which move in respect to one another. However, CreightonIV'196 teaches an apparatus with magnetic elements which move in respect to one another (Col. 5, Line 33-34). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kuckes'755 and Kuckes'775 to include the respective magnetic movement as taught by CreightonIV'196 in order to avoid translating the assembly (Col. 5, Line 37-38). While Kuckes'755 hints in US Patent No. 5,258,755 about finding the instantaneous angular position [roll angle], Kuckes'775 explains the process in more detail. Kuckes'775 teaches a magnet shifted by a driver at a specific roll angle (Col. 4, Line 32-60). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kuckes'755 to include the roll angle measurement of Kuckes'775 in order to understand the relationship between the rotating magnetic field source and the magnetic field sensor (Col. 4, Line 32-33).

Response to Arguments

11. Applicant's corrections with respect to drawings have been fully considered. The objection of the drawings has been withdrawn. In regarding to the claim objection for Claim 21, the clearer claim amendments filed 09/26/2007 indicates that the apparent cross out on the "a" was due to a copy error and the Applicant did not intend to cross out the "a". The objection of Claim 21 has been withdrawn. In regards to the 101

rejection to Claim 29, the rejection is withdrawn due to the Applicant's cancellation of the claim.

12. Applicant's arguments filed 09/26/2007 have been fully considered but they are not persuasive. The Examiner carefully reviewed the Applicant's arguments and respectfully disagrees. The Applicant stated that Kuckes'755 does not teach that the permanent magnetic, which produces the perpendicular field as shown in Figure 3, Element 44, is sets forth the frequency modulation of the magnetic field as generated by the permanent magnet which generates the perpendicular field. Kuckes'755 teaches the perpendicular field can be modulated by the magnet (Col. 10, Line 53-54). The claim, as written, does not require that the modulation be achieved with the same permanent magnet that produces the magnetic movement as Applicant contends. Thus the arrangement, as taught by Kuckes'755 including an additional element for providing the modulation, is considered to meet the claim. Further the Applicant presented the argument that Kuckes'755 does not teach the magnet with the independent rotation of the instrument. The Examiner respectfully disagrees and contends that Kuckes'755 does in fact teach the independent or separate rotation of the magnetic from the instrument (Col. 10, Line 44-50).

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helene Bor whose telephone number is 571-272-2947. The examiner can normally be reached on M-T 8:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ERIC F. WINAKUR
PRIMARY EXAMINER

hcb